DEPARTMENT OF TRANSPORTATION
DIVISION OF ENGINEERING SERVICES
Office of Structural Materials
Quality Assurance and Source Inspection

Bay Area Branch
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Contract #: 04-0120F4
Cty: SF/ALA Rte: 80 PM: 13.2/13.9
File #: 1.28

WELDING INSPECTION REPORT

Resident Engineer: Siegenthaler, Peter
Address: 333 Burma Road
City: Oakland, CA 94607

Report No: WIR-022157
Date Inspected: 25-Mar-2011

Project Name: SAS Superstructure
Prime Contractor: American Bridge/Fluor Enterprises, a JV
Contractor: American Bridge/Fluor Enterprises, a JV

OSM Arrival Time: 700
OSM Departure Time: 1530
Location: Job Site

CWI Name:	John Pagliero and Gary Ersham			**CWI Present:**	☑ Yes	☐ No	
Inspected CWI report:	☐ Yes	☑ No	☐ N/A	**Rod Oven in Use:**	☑ Yes	☐ No	☐ N/A
Electrode to specification:	☑ Yes	☐ No	☐ N/A	**Weld Procedures Followed:**	☑ Yes	☐ No	☐ N/A
Qualified Welders:	☑ Yes	☐ No	☐ N/A	**Verified Joint Fit-up:**	☐ Yes	☑ No	☐ N/A
Approved Drawings:	☑ Yes	☐ No	☐ N/A	**Approved WPS:**	☑ Yes	☐ No	☐ N/A
				Delayed / Cancelled:	☐ Yes	☑ No	☐ N/A

Bridge No: 34-0006
Component: Orthotropic Box Girder

Summary of Items Observed:

Caltrans Office of Structural Material (OSM) Quality Assurance Inspector (QAI) Joselito Lizardo was present at the Self Anchored Suspension (SAS) job site as requested to perform observations on the welding of components for the San Francisco Oakland Bay Bridge (SFOBB) Project.

At OBG 10E/11E top deck plate ‘A’ inside, QA randomly observed ABF/JV qualified welder Hua Qiang Hwang and Wai Kitlai fix some of the gouges that were incurred during the tack welding of fitting gear/temporary attachments. The welders were noted smooth grinding the gouges using a flapper disk.

At OBG 8W/9W bottom plate ‘D1’ inside, QA randomly observed ABF/JV qualified welder Jorge Lopez perform CJP repair welding. The welder was noted welding in 1G (flat) position utilizing SMAW with 1/8” diameter E7018H4R electrode implementing Caltrans approved Welding Procedure Specification (WPS) ABF-WPS-D15-1001 Repair. The first time welding repair located at Y=550mm and having excavation profile of 120mm long x 30mm wide x 16mm deep was excavated to a boat shape profile and was tested with Magnetic Particle Testing (MT) prior welding. During welding, ABF QC Jesse Cayabyab was noted monitoring the welder and his welding parameters. QA noted parameter during welding was 148 amperes which appears in compliance to the WPS. At the end of the shift, welding repair at the location mentioned above was completed.

At OBG 7W/8W LS5 longitudinal stiffener inside, QA randomly observed ABF welder Fred Kaddu perform 3G (vertical) Shielded Metal Arc Welding (SMAW) complete joint penetration (CJP) welding fill pass to cover pass on the stiffener splice butt joint. The stiffener plates being welded are made of high strength plate material HPS 485W and has a thickness of 30mm. The joint has a double V joint preparation that was welded from one side and

after the completion from one side to be back gouged, Non Destructive Testing (NDT) tested using Magnetic Particle Testing (MT) and back welded to the other side. The welder was noted using E9018H4R with 1/8" diameter electrode implementing Caltrans approved welding procedure specification (WPS) ABF-WPS-D1. 5-1012-3. The joint being welded was root welded using a ceramic backing. The splice joint was preheated to greater than 200 degrees Fahrenheit using Miller Proheat 35 Induction Heating System heater blanket located at the opposite side of the plate prior/during welding. The QA Inspector noted the ABF QC Gary Ersham was on site monitoring the in process preheats and welding parameters. During the shift, QA noted ABF QC Gary Ersham was closely monitoring the issuance of E9018H4R electrodes due to its limited exposure time allowed. At the end of the shift, cover pass welding on both sides of the butt joint was completed and the welder was instructed by QC to hold the preheat of >200° F for three more hours after welding as required.

At tower base plate to 13 meters elevation, QA randomly observed ABF welder Rick Clayborn perform root pass to cover pass welding Partial Joint Penetration (PJP) temporary strong back attachments . The welder was noted welding in 1G (flat) position utilizing self shielded Flux Cored Arc Welding (FCAW-S) with 0.072" diameter E71T-8 wire electrode implementing Caltrans approved Welding Procedure Specification (WPS) ABF-WPS-D15-2160 FCAW. The P4 marked strong back being welded is 90° strong back that was welded on shear plate on one side and to tower skin plate on the other side. The welder was noted welding at weld map location 19, 2o, 23 and 24 at elevation 9 meters. During the shift, QA noted ABF QC John Pagliero was on site monitoring the in process preheats and welding parameters. At the end of the shift, PJP welding of the P4 strong back at various locations was still continuing and should remain Monday.

FW Spencer:
The QAI observe the ongoing installation, field fit-up and tack welding of the utility pipe supports (WT 4 ½" x 26 ½" long) along the E5 grid line (panel point PP99 to PP108) located on top side of the OBG's identified as 110325 W1 to W14. The WT utility support was fillet welded on four sides of the WT web to 3" x 3" angular that was welded earlier to the 'A' deck. The QC inspection was performed by Steve Jensen utilizing the Welding Procedure Specification (WPS) identified as Fillet Murex to monitor the tack welding and fillet welding and to verify the welding parameters. The welding parameters were observed and recorded as 92 amps utilizing 2.4 mm electrodes with the welding performed in the 2F and 3F position. The tack welding/fillet welding was performed by Rick Kiikvee ID-5319.

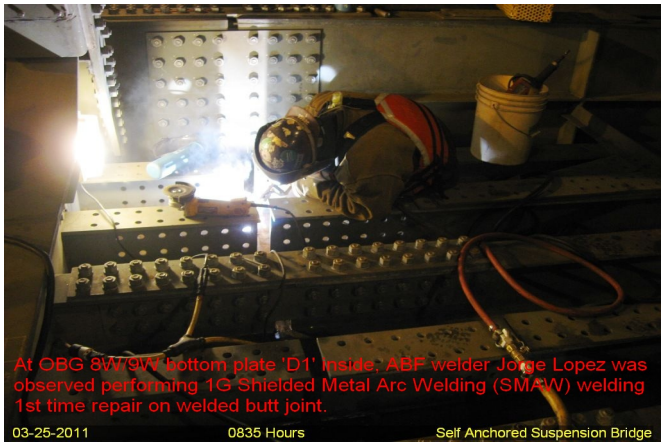
At the request of Quality Control Field Supervisor, Bonifacio Daquinag, QA has randomly verified the QC MT of the Complete Joint Penetration (CJP) welding of one transverse and two longitudinal stiffeners and two edge plates splice butt joints. The QA verification was performed to verify that the welding and the MT inspection performed by the QC inspector meet the requirements of the contract documents. At the conclusion of the QA verification it appeared that the weld and the QC inspection complied with the contract documents.

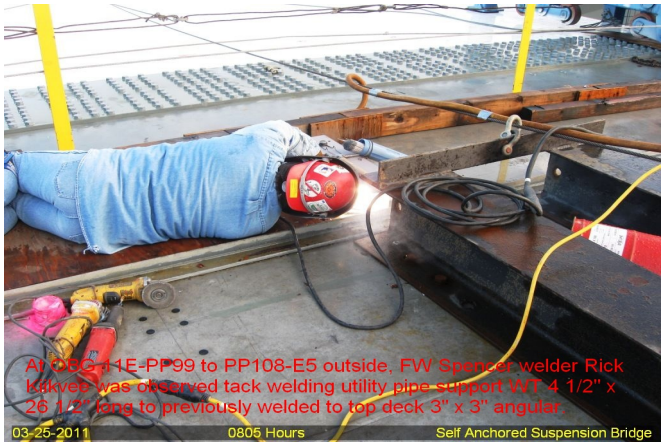
1. OBG 10E/11E edge plate 'B' inside – QA MT verified
2. OBG 10E/11E edge plate 'F' inside – QA MT verified
3. OBG 2E-PP13.5-E5-LSW longitudinal stiffener inside - QA MT verified
4. OBG 2E-PP13.5-E5-LSE longitudinal stiffener inside - QA MT verified

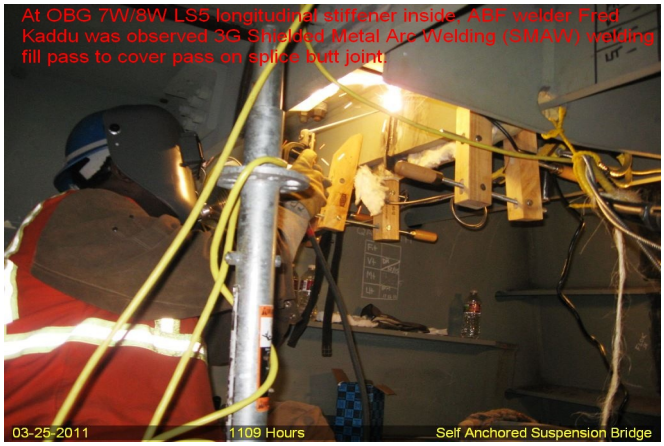
5. OBG 2E-PP13.5-E5-TS transverse stiffener inside - QA MT verified

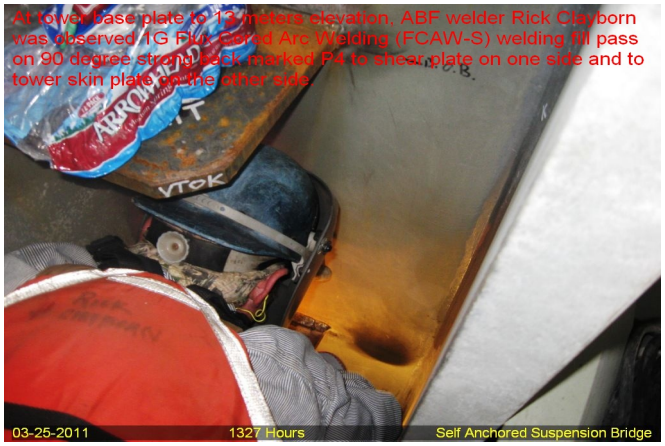
WELDING INSPECTION REPORT

(Continued Page 3 of 3)









Summary of Conversations:

No significant conversation ocurred today.

Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact SMR Nina Choy 510-385-5910, who represents the Office of Structural Materials for your project.

Inspected By:	Lizardo,Joselito	Quality Assurance Inspector
Reviewed By:	Levell,Bill	QA Reviewer